

WHAT IS CLAIMED IS:

(1) A method for purchasing material from a supplier comprising the steps of:

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obtaining a second material from said supplier;

creating a first material signature by use of said second material;

obtaining said material from said supplier;

10 material;

comparing said first and second material signatures;

and

purchasing said material *B* only if said second and first material signatures are substantially similar.

15 (2) The method of Claim 1 wherein said first material signature comprises an amount of carbon, manganese, phosphorous, sulfur, silicon, chromium, molybdenum, and vanadium present within said second material.

20 (3) The method of Claim 2 wherein said second material signature comprises an amount of carbon, manganese, phosphorous, sulfur, silicon, chromium, molybdenum, and vanadium present within said material.

25 (4) The method of Claim 1 wherein said second material has a certain toughness, said method further comprising the steps of:

determining said toughness; and

creating said first material signature only if said toughness is greater than a predetermined value.

(5) The method of Claim 4 wherein said first material signature comprises an amount of sulfide, aluminate, 5 silicate, and globular oxides present within said second material.

(6) The method of Claim 5 wherein said second material signature comprises an amount of sulfide, aluminate, silicate, and globular oxides present within said 10 said material.

(7) A method for purchasing a die formed from a certain material provided by a certain supplier, said method comprising the steps of:

obtaining second material from said supplier;
creating a first material signature by use of said second material;

acquiring a sample of said die;
creating a second material signature by use of said sample; and

20 determining whether said first and second material signatures are substantially similar.

(8) The method of Claim 7 wherein said first material signature comprises an amount of carbon, manganese, phosphorous, sulfur, silicon, chromium, molybdenum, and 25 vanadium present within said second material.

(12) The method of Claim 2 wherein said second material signature comprises an amount of carbon, manganese, phosphorous, sulfur, silicon, chromium, molybdenum, and vanadium present within said material.

5 (13) The method of Claim 3 wherein said second material has a certain toughness, said method further comprises the steps of:

determining said toughness;

10 creating said first material signature only if said toughness is greater than a predetermined value.

(14) The method of Claim 10 wherein said first material signature further comprises an amount of sulfide, aluminate, silicate, and globular oxides present within said second material.

15 (15) The method of Claim 11 wherein said second material signature further comprises an amount of sulfide, aluminate, silicate, and globular oxides present within said material.

(16) A method for approving dies respectively produced by 20 a plurality of suppliers, said method comprising the step of:

obtaining material from each of said plurality of suppliers;

25 identifying the presence and amount of certain constituents within each of said obtained materials,

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thereby creating a material signature for each of said plurality of suppliers;

obtaining a sample from each die;

identifying the presence and amount of said certain constituents within each sample; and

evaluating said dies by use of said material signatures and said identification.

(14) The method of Claim 13 wherein said constituent comprises of carbon, manganese, phosphorous, sulfur, silicon, chromium, molybdenum, and vanadium present within said second material.

(15) The method of Claim 13 further comprises said steps of testing the toughness of said obtained material; and only purchasing a die from a supplier of material which had a toughness which exceeded a predetermined value.

(16) The method of Claim 13 further comprising the steps of determining the presence and amount of carbide with each of said samples; and only purchasing a die having a certain amount of carbide.

(17) The method of Claim 13 further comprising the step of only purchasing a die form which a sample was taken which had the presence and amount of certain constituents equal to that which was found in at least one of said materials obtained from one of said plurality of suppliers.